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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,573	01/20/2004	Roberto Carboneri	03-02 US	1042

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Varian Inc.
Legal Department
3120 Hansen Way D-102
Palo Alto, CA 94304

EXAMINER

GREENE, JASON M

ART UNIT PAPER NUMBER

1724

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,573

Applicant(s)

CARBONERI ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/18/04; 2/22/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because it recites the legal phraseology "said" in line 6. Correction is required. See MPEP § 608.01(b). The Examiner suggests Applicants rewrite the phrase "said membrane" as "the membrane".

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-7, 9, 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Bley et al. (US 6,277,177 B1).

Bley et al. discloses a gas-selective permeable membrane comprising a disc-shaped quartz glass body (4) of a material permeable to a test gas (helium) and impermeable to at least another gas, the body comprising a plurality of reduced thickness areas (5) highly permeable to the test gas, the reduced thickness areas being surrounded by a plurality of thicker areas ensuring the structural strength of the membrane, wherein the membrane further comprises heating means (10) comprising an electrical resistor comprising a film of conductive material partly covering said reduced thickness areas and extending along a part of the perimeter of the reduced thickness area in Figs. 1-4e and col. 1, line 40 to col. 3, line 38.

5. Claims 1-11, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by German Patent DE 101 22 733 A1.

DE 101 22 733 A1 discloses a gas-selective permeable membrane comprising a disc-shaped quartz glass body (32) of a material permeable to a test gas (helium) and impermeable to at least another gas, the body comprising a plurality of circular-shaped reduced thickness areas (34) highly permeable to the test gas, the reduced thickness areas being surrounded by a plurality of thicker areas ensuring the structural strength of the membrane, wherein the membrane further comprises heating means (36) comprising an electrical resistor comprising a film of conductive material partly covering said reduced thickness areas and extending along a part of the diameter of the reduced thickness area, the body having a thickness of 500-1000 μm and the reduced thickness

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areas being 6 μm thick in Figs. 1 and 2 and page 1, line 21 to page 4, line 11 of the English language translation provided by Applicants.

6. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Published Patent Application JP 8-73201.

JP 8-73201 discloses a gas-selective permeable membrane comprising a disc-shaped body (1) of a material permeable to a test gas (hydrogen) and impermeable to at least another gas, the body comprising a plurality of circular-shaped reduced thickness areas (3) highly permeable to the test gas, the reduced thickness areas being surrounded by a plurality of thicker areas ensuring the structural strength of the membrane in Figs. 1-5 and paragraphs [0005] to 0014] of the English language translation.

7. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Bley et al. (US 6,277,177 B1).

Bley et al. discloses an apparatus for leak detection comprising a vacuum tight chamber, a vacuum pump connected to the chamber (through the vacuum gauge 2) to bring the pressure in said chamber to a lower value than in an outside environment, a gas-selective permeable membrane (4) separating at least a portion of said chamber from the outside environment comprising a body of material permeable to at least one test gas (helium) and substantially impermeable to at least another gas, the body comprising a plurality of reduced thickness areas (5) highly permeable to the test gas,

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the reduced thickness areas being surrounded by a plurality of thicker areas, and heating means (10) for heating the reduced thickness areas with an electrical resistor covering said reduced thickness areas, and means for detecting a presence of said at least one test gas in the chamber in Figs. 1-4e and col. 1, line 40 to col. 3, line 38.

8. Claims 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Published Patent Application JP 8-73201.

JP 8-73201 discloses a method of manufacturing a gas-selective permeable membrane comprising the steps of providing a body (1) of a material permeable to at least one determined test gas and substantially impermeable to at least another gas, forming at least one reduced thickness area (3) permeable to the at least one gas on the body, and removing a material from said body so as said at least one reduced thickness area being at least partly surrounded by a thicker area ensuring the structural strength of the membrane using the steps recited in claims 21 and 22 in Figs. 1-5 and paragraphs [0005] to 0014] of the English language translation.

9. Claims 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Bley et al. (US 6,277,177 B1).

Bley et al. discloses a method of manufacturing a gas-selective permeable membrane comprising the steps of providing a body (4) of a material permeable to at least one determined test gas and substantially impermeable to at least another gas, forming at least one reduced thickness area (5) permeable to the at least one gas on

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the body, and removing a material from said body so as said at least on reduced thickness area being at least partly surrounded by a thicker area ensuring the structural strength of the membrane using the steps recited in claim 21 in Figs. 1-4e and col. 1, line 40 to col. 3, line 38.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 8, 11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bley et al. (US 6,277,177 B1) in view of German Patent DE 101 22 733 A1.

Bley et al. differs from the claims in that it teaches the reduced thickness areas being square instead of circular.

DE 101 22 733 A1 discloses the reduced thickness areas being circular in Figs. 1 and 2 and page 1, line 21 to page 4, line 11 of the English language translation provided by Applicants.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the circular shape of DE 101 22 733 A1 into the reduced thickness areas of Bley et al. to provide a membrane having improved

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mechanical strength by increasing the surface area of the thicker areas, as is well known in the art. Furthermore, it would have been obvious to incorporate the circular shape of DE 101 22 733 A1 into the reduced thickness areas of Bley et al. in that such are alternate shapes in the art for forming reduced thickness areas in semi-permeable membranes.

12. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bley et al. (US 6,277,177 B1) or German Patent DE 101 22 733 A1 in view of Northrup et al. (US 5,882,496) and Franz et al. (US 6,541,676 B1).

Bley et al. and DE 101 22 733 A1 do not teach the heater having a multilayer construction.

Northrup et al. discloses a heater comprising an electrical resistor comprising a film of conductive material (chromium) covered with a protecting layer (gold) in col. 4, lines 45-49. Franz et al. discloses using a layer of titanium as an adherence layer in col. 9, lines 51-52.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the heater of Northrup et al. into the membranes of Bley et al. and DE 101 22 733 A1 to provide a heater capable of reliably heating the membrane. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the titanium adherence layer of Franz et al. to ensure a reliable connection between the heater and the membrane.

Conclusion

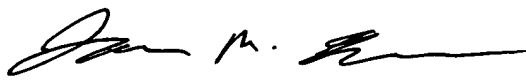
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Edlund reference discloses a similar membrane..

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Primary Examiner
Art Unit 1724


5/12/06

jmg
May 12, 2006